

REMARKS

This Amendment and Response is filed in connection with the Office Action mailed on Sept. 11, 2008. Please consider the above-identified patent application in view of the following.

Claims 1, 15, and 22 are amended herein, no claims are canceled, and no claims are newly added; as a result, claims 1, 3-7, 15, 17-22, and 24-28 are pending in this application.

Examiner Interview Summary

The Applicant would like to thank Examiner Ben C. Wang for the courtesy of a phone interview conducted on Nov. 5, 2008 and Nov. 19, 2008 between the Examiner and the Applicant's representative, Jim H. Salter. During the interviews, the claims and the cited references were discussed and an agreement was reached that the Examiner may allow the pending claims in view of the amendments and arguments provided herein. This Amendment is responsive to the Office Action and the matters discussed during the interviews.

§103 Rejection of the Claims

Claims 1, 3, 5, 7, 15, 17, 19, 21-22, 24, 26, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lehman, et al. (U.S. 4,796,179, hereinafter, "Lehman") in view of Gauthier et al., "Automatic Generation and Targeting of Application Specific Operating Systems and Embedded Systems Software", 2001, IEEE (hereinafter 'Gauthier'), and further in view of Liu et al., 'Timed Multitasking for Real-Time Embedded Software', Feb. 2003, IEEE (hereinafter, 'Liu').

Claims 4, 18, and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lehman, in view of Gauthier and further in view of Xu et al., "On Satisfying Timing Constraints in Hard-Real-Time Systems", 1991, ACM (hereinafter 'Xu'), and further in view of Liu.

Claims 6, 20, and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lehman, in view of Gauthier and Xu, further in view of D. Lake (US 2004/0045003A1) (hereinafter 'Lake'), and further in view of Liu.

Applicant respectfully submits that the Office Action did not make out a *prima facie* case of obviousness, because even if combined, the cited references fail to teach or suggest all of the claim limitations of the independent claims of the present Application.

Applicant continues to assert that the previously submitted claims with the recited limitations distinguish over Lehman and all other art of record. As correctly admitted in the Office Action at page 3, “Lehman does not explicitly disclose ... synthesizing source code from commands embedded in source code to implement a task scheduler that uses the scheduling algorithm for controlling execution of said n tasks, said synthesized source code being executable on a target system after compilation.” Lehman does not use embedded commands. Rather, Lehman provides functional blocks where each functional block has a corresponding source code template which is used to generate the source code. Each template in Lehman includes invariant code which defines a computation, and variables for tailoring the source code to use any specified parameters and also to couple the source code to the memory locations for its inputs and outputs. The presently claimed embodiments do not use or need templates or invariant code. For example, the embodiment recited in claim 1 includes, “synthesizing source code from commands embedded in source code.” Claims 15 and 22 include similar limitations. As such, Lehman fails to teach each and every element of the currently pending claims.

Gauthier describes a method for the automatic generation of application specific operating systems and automatic targeting of application software. At section 3.5.3 of Gauthier, the reference states, “Code Expander takes as input a list of macro code from Code Selector and parameters (processor and allocation information[]) from [the] Architecture Analyzer. It generates the final OS code by expanding the macro codes of elements to source codes (in C or assembly).” In the Office Action on page 4, Gauthier is offered as describing synthesizing source code from commands embedded in source code, citing an example of macro code expansion in Gauthier. Gauthier was published in 2001.

However, Gauthier does not describe or suggest an implementation as presently claimed for specifying two types of tasks, one type that can be scheduled for execution using a specified scheduling algorithm, and another type of task that is executed only

once upon the initial execution of the task scheduler. As correctly admitted in the Office Action at page 5, “Lehman and Gauthier do not explicitly disclose, “specifying t init-tasks that are executed only once upon initial execution of a task scheduler, t being less than or equal to n... the task scheduler further controlling one execution of each of said set of t init-tasks.” Further, the Applicant submits that Gauthier should be withdrawn as a prior art reference from the present patent application for the reasons set forth below.

The Office Action asserts that Liu discloses specifying t init-tasks that are executed only once upon initial execution of a task scheduler, t being less than or equal to n (see Office Action at pg. 5, 4th paragraph). Liu was published in 2003. However, the Applicant submits that Liu should also be withdrawn as a prior art reference from the present patent application for the reasons set forth below.

The present application is a continuation-in-part patent application claiming priority to U.S. Patent Application Serial No. 09/309,147; filed May 10, 1999 by the same inventor, Robert Zeidman, as the present application. The parent U.S. Patent Application Serial No. 09/309,147 has since issued as U.S. Patent No. 6,934,947 (herein the ‘947 patent). Included herewith, the Applicant has provided a copy of the preliminary amendment timely filed on or about Jan. 20, 2004 in the present case that claims priority to the application issued as the above-referenced U.S. Patent (the ‘947 patent).

The ‘947 patent clearly describes synthesizing source code from commands embedded in source code (e.g., see ‘947 patent, col. 4, line 21 to col. 6, line 16). In particular, the ‘947 patent describes a code synthesizer to create synthesized code of the polling loop which can be compiled. Thus, the ‘947 patent provides support for the presently pending claims in a parent patent that pre-dates the Gauthier reference. Gauthier was published in 2001 and the ‘947 patent was filed on May 10, 1999. Therefore, Gauthier should be withdrawn as a prior art reference from the present patent application.

The ‘947 patent also describes specifying t init-tasks that are executed only once upon initial execution of a task scheduler. Specifically, the ‘947 patent states, “An INIT task is a subroutine which is called once by the task management code to initialize a LOOP task or an ISR task.” (‘947 patent. col. 3, lines 28-31). Also see the ‘947 patent at

col. 5, lines 1-2. As such, the '947 patent describes the init-tasks alleged in the Office Action to be taught by Liu. Liu was published in Feb. 2003 and the '947 patent was filed on May 10, 1999. Thus, the '947 patent substantially pre-dates the Liu reference and provides support for the presently pending claims in a parent patent disclosure. Therefore, both Liu and Gauthier are not proper prior art references for the purposes offered in the Office Action. The Applicant submits that Liu and Gauthier should be withdrawn as prior art references from the present patent application for the reasons set forth above.

In the embodiments as currently claimed, for example in claim 1, the claimed embodiments include, "specifying a set of n tasks, task(1) through task(n), to be scheduled for execution, each task having an associated task control block; and specifying t init-tasks that are executed only once upon initial execution of a task scheduler, t being less than or equal to n ... the task scheduler further controlling one execution of each of said set of t init-tasks, said synthesized source code being executable on a target system after compilation; and synthesizing source code from commands embedded in source code to manipulate task control blocks for said set of t init-tasks." Thus, the init-tasks as claimed are independently schedulable tasks executed once by the task scheduler. It is clear from the currently pending claims and from the specification filed with the present application and the parent application that the claimed init-task is a task of a type that can be scheduled by the task scheduler and is not merely a portion of code. In the specification filed with the present application, page 1, lines 13-20, each task is allocated a time slice that is allocated according to a scheduling algorithm and a priority and controlled by a kernel of a real-time operating system. The '947 patent includes a similar description of tasks. Thus, the task as claimed in the pending claims and described in the specification filed with the present application and the parent application is an independently schedulable entity under control of a task scheduler that can be distinguished from the initialization code portion in the cited references where only a portion of each task performs initialization and is not itself an independently schedulable entity.

Additionally, claims 1, 15, and 22 as amended herein include the limitation, "synthesizing source code from commands embedded in source code to manipulate task

control blocks for said set of t init-tasks.” The cited references do not describe or suggest synthesizing source code from commands embedded in source code to manipulate task control blocks for said set of t init-tasks. Data associated with tasks and task management has traditionally been processed by core parts of an operating system. These core parts of an operating system are typically generated when the operating system is built. In contrast, the claimed embodiments provide a method and apparatus for synthesizing an important task management function (e.g., manipulating task control blocks for a set of t init-tasks) from commands embedded in source code. The claimed embodiments thereby provide a more readily configurable system than possible using techniques described in the cited references. Thus, this element of the amended claims provides yet another distinguishing feature not found or suggested in the art of record.

Further, as explained above, Gauthier and Liu are not proper prior art references and thus cannot be used to support a rejection of the pending claims. No other cited references teach or suggest the combinations of elements as currently claimed.

Therefore, the Applicant respectfully submits that for at least the reasons set forth above and previously submitted, independent claims 1, 15, and 22 and their dependent claims are allowable over Lehman, Gauthier, Stewart, Xu, Lake, Liu, the other cited references, and combinations thereof. The Applicant respectfully submits that the current rejections have been overcome. The Applicant respectfully requests withdrawal of the §103(a) rejections.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Jim H. Salter at 408-406-4855 to facilitate prosecution of this application.


Respectfully submitted,

ROBERT M. ZEIDMAN

By his Representatives,

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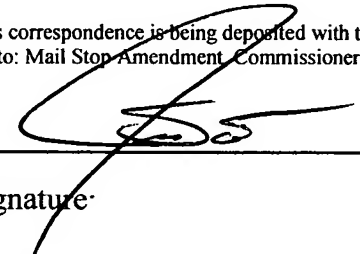
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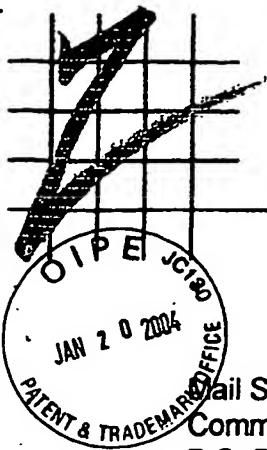
By 
Jim H. Salter
Reg. No. 36,668

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 5th day of Dec., 2008.

Jim H. Salter

Name


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January 14, 2004

Mail Stop Non-fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

To Whom It May Concern:

I am amending patent application 10/688,573 according to the enclosed Preliminary Amendment form.

Sincerely,

Robert Zeidman

10/688,573)

Robert Zeidman

SOFTWARE TOOL FOR SYNTHESIZING A REAL-TIME OPERATING SYSTEM

Preliminary Amendment

Please replace paragraph 1 with the following amended paragraph:

The present application ~~relates to~~ is a continuation-in-part
application of copending U.S. patent application, entitled "Visual Tool for
Developing Real Time Task Management Code," serial no. 09/309,147, filed on May
10, 1999.